

APPENDIX K

Draft Memorandum Regarding Shoreline Study Ecosystem Restoration Phasing Alternatives (Ponds A9-A15)



South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

Memorandum

To: Shoreline Study planning team

From: South Bay Salt Pond planning team

Date: 17 November 2011

Re: Shoreline Study Ecosystem Restoration Phasing Alternatives (Ponds A9-15)
(Draft)

Below is the consensus preferred approach for the phasing of Ponds A9-A15 as they relate to the Shoreline Study planning. All of these alternatives assume that the project will be able to proceed beyond the 50:50 scenario based on the adaptive management plan, particularly regarding the issues of waterbird use and mercury.

Preferred Phasing Alternative

The different starting times for each breach event (phase) place the restored ponds on a different part of the sea level rise curve. This means that without substantial suspended sediment, if delayed, Ponds A12-15 will end up at lower elevations because they have fewer years to accrete sediment and their restoration begins on a steeper part of the sea level rise curve.

Therefore, the preferred alternative phasing sequence would be to expedite the restoration of Pond A12 (the most deeply subsided pond). This will help scour out Alviso Slough and will also provide an area to construct upland ecotone areas from the beginning of the project. Subsequent phases may then include Ponds A9-A11, and finally A13-A15. Upland refugia areas would be designed into each phase, with the upland ecotone areas located on the landward side of restored ponds that are adjacent to flood protection levees.

The ecosystem features proposed under the “less fill” to “more fill” scenarios still apply to this Alternative.

Issues to be addressed under Adaptive Management

If the adaptive management plan indicates that we are not ready to open Pond A12 due to waterbird and/or mercury concerns, options for capturing sediment in A12 include:

- Installing a new water control structure in Pond A12 to begin capturing sediment.
- Importing clean fill to raise the pond bottom to accelerate marsh evolution (as was done with Inner Bair Island).

The potential import of fill could be done in advance, after, or simultaneously with breaching other ponds in the A9-15 complex. The filling of A12 (and possibly the other deeply subsided Ponds A13 and A15) may reduce scour in Alviso Slough, bury any in situ mercury, and reduce the material volumes needed for future construction of a broad upland ecotone area.

If concerns about Pond A12 persist, the project could then proceed with breaching Ponds A9-A10. The division between the restored and managed ponds includes the realignment of the internal berm between Pond A9 and A11 to more accurately reflect the historic marsh drainage patterns. Subsequent phases may include restoration of Ponds A11-A15.

Upland refugia areas would be designed into the original phase. If the first phase (A9 and A10) alone remains the ultimate configuration of the restoration in these ponds, then a broad upland ecotone area can be added to the realigned internal berm described above. If further phases of tidal restoration are constructed, then the upland ecotone areas would be located on the landward side of all restored ponds as described above.

Proposed Timing

For purposes of habitat evolution modeling, we propose the following timing for the preferred alternative:

Pond A12: breached in 2017

Ponds A9-A11: breached in 2022

Ponds A13-A15: breached in 2030

ESA-PWA will be providing updated habitat maps of this scenario.

New Chicago Marsh

New Chicago Marsh (NCM) will not be analyzed as part of the ecosystem benefits for the proposed project. However, the Refuge has spelled out below their long term vision for NCM to assist the team in understanding the rationale behind some of the proposed levee alignments.

For the foreseeable future (next 10 to 20 years), the ecological goal for NCM will be to maintain or improve the quality of the existing managed marsh for the salt marsh harvest mouse (SMHM) and nesting bird species in NCM and A16. This goal is unlikely to change until sufficient replacement habitat for the SMHM and breeding birds has been created in the adjacent areas. However, in the longer term, once there is high-quality marsh habitat in the project area to support SMHM populations and nesting birds, the Refuge could change the management or configuration of NCM. These future changes would need to be defined through an adaptive management process and are not proposed to be part of the Shoreline Study alternatives. Rather this alternative acknowledges that the future management options for NCM greatly depend on the alignment of the flood protection levee build by the Shoreline Study. By constructing a levee alignment “behind” NCM (Alignments 2 and 3) the Shoreline Study would avoid impacts to NCM and allow for future habitat enhancement by allowing the Refuge to:

1. Continue existing management for the SMHM and maintain the connection between the nesting islands in Pond A16 and forage/cover for chicks in NCM; or
2. Connect NCM to the tides and create a deep water pond; or
3. Connect NCM to the tides and manage flows with a water control structure to accumulate sediment and raise existing elevation to marsh plain.

If the levee is constructed on the existing pond berm alignment (Alignment 1), the Refuge's future options will be constrained to the existing management régime with the additional impact of degraded connectivity between Pond A16 and NCM.

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